

## HEARING AID WITH DIGITAL COMPRESSION RECAPTURE

### Abstract

5           Systems, devices, and methods are provided to inhibit apparent amplitude modulation in non-linear processing that causes distortion in a processed signal. One aspect of the invention includes a hearing aid. The hearing aid includes a microphone to receive an input signal, a speaker to reproduce the input signal, and a processor. The processor processes the input signal using a gain. The processor includes an inhibitor, 10 which inhibits distortions, and an adjuster, which adjusts the gain. The inhibitor acts to smooth an envelope of the input signal to inhibit undesired modulation. The adjuster adjusts the gain if the envelope is either above or below a threshold. The hearing aid further includes a compression recapture system to supply the compressed portion of the input signal to more closely reproduce the actual input signal.

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